

CLAIMS

1. A monitoring device, for allowing a processor to monitor a value of a parameter derived from an analog signal, the monitoring device comprising:

5 an analog-digital converter, for producing a digital signal corresponding to the analog signal;

a logic unit, for obtaining a value of said parameter, based on the digital signal; and

10 an output register, accessible by the processor unit, the register containing the value of said parameter obtained by said logic unit.

15 2. A monitoring device as claimed in claim 1, wherein the monitoring device further comprises means for setting a threshold value for said parameter, and for sending a signal to said processor when the value of the parameter reaches the threshold value.

20 3. A monitoring device, for connection to a battery to allow a processor to monitor a voltage supplied by the battery, the monitoring device comprising:

an analog-digital converter, for producing a digital signal stream, corresponding to successive measured values of the battery voltage;

25 an output register, accessible by the processor unit, the register containing the value of at least one output parameter derived from said signal stream; and

a logic unit, for updating the value of the or each parameter stored in the register as required in response to the digital signal stream.

30 4. A monitoring device as claimed in claim 3, wherein the register contains the maximum value of the battery voltage supplied over a period since the register was last accessed by the processor.

35 5. A monitoring device as claimed in claim 3, wherein the register contains the minimum value of

-11-

the battery voltage supplied over a period since the register was last accessed by the processor.

6. A monitoring device as claimed in claim 3, wherein the register contains the average value of the battery voltage supplied over a fixed period.

7. A monitoring device, for connection to a battery to allow a processor to monitor a charging current supplied to the battery, the monitoring device comprising:

an analog-digital converter, for producing a digital signal stream, corresponding to successive measured values of the charging current;

an output register, accessible by the processor unit, the register containing the value of at least one output parameter derived from said signal stream; and

a logic unit, for updating the value of the or each parameter stored in the register as required in response to the digital signal stream.

8. A monitoring device as claimed in claim 7, wherein the register contains the maximum value of the charging current supplied over a period since the register was last accessed by the processor.

9. A monitoring device as claimed in claim 7, wherein the register contains the minimum value of the charging current supplied over a period since the register was last accessed by the processor.

10. A monitoring device as claimed in claim 7, wherein the register contains the average value of the charging current supplied over a period.

11. A mobile communications device, comprising a monitoring device as claimed in claim 7.

12. A mobile communications device, comprising a processor, and a monitoring device, for connection to a battery of said device to allow the processor to monitor a voltage supplied by the battery, the

monitoring device comprising:

an analog-digital converter, for producing a digital signal stream, corresponding to successive measured values of the battery voltage;

an output register, accessible by the processor unit, the register containing the value of at least one output parameter derived from said signal stream; and

a logic unit, for updating the value of the or each parameter stored in the register as required in response to the digital signal stream.

13. A mobile communications device as claimed in claim 12, wherein the register contains the maximum value of the battery voltage supplied over a period and the average value of the battery voltage supplied over a period.

14. A mobile communications device as claimed in claim 13, wherein the maximum value of the battery voltage supplied over a period is updated at a first rate, and the average value of the battery voltage supplied over a period is updated at a second rate slower than the first rate.

15. A mobile communications device as claimed in claim 13, which, in at least one mode of operation, produces an internal signal indicating that the device is transmitting, and wherein the stored maximum value of the battery voltage is updated at a first rate while said internal signal is being produced, and at a second lower rate while said internal signal is not being produced.

16. A mobile communications device as claimed in claim 12, wherein the register contains the minimum value of the battery voltage supplied over a period and the average value of the battery voltage supplied over a period.

17. A mobile communications device as claimed in

claim 16, wherein the minimum value of the battery voltage supplied over a period is updated at a first rate, and the average value of the battery voltage supplied over a period is updated at a second rate slower than the first rate.

18. A mobile communications device as claimed in claim 16, which, in at least one mode of operation, produces an internal signal indicating that the device is transmitting, and wherein the stored minimum value of the battery voltage is updated at a first rate while said internal signal is being produced, and at a second lower rate while said internal signal is not being produced.

19. A mobile communications device as claimed in claim 12, which, in at least one mode of operation, produces an internal signal indicating that the device is transmitting, and wherein the register contains a first minimum value of the battery voltage supplied over a period while said internal signal is being produced, and a second minimum value of the battery voltage supplied over a period while said internal signal is not being produced.

20. A monitoring device, for connection to a battery to allow a processor to monitor a temperature, the monitoring device comprising:

an analog-digital converter, for producing a digital signal stream, corresponding to successive measured values of the temperature;

an output register, accessible by the processor unit, the register containing the value of at least one output parameter derived from said signal stream; and

a logic unit, for updating the value of the or each parameter stored in the register as required in response to the digital signal stream.

21. A monitoring device as claimed in claim 20,

wherein the register contains the maximum value of the temperature supplied over a period since the register was last accessed by the processor.

22. A monitoring device as claimed in claim 20, wherein the register contains the minimum value of the temperature supplied over a period since the register was last accessed by the processor.

23. A monitoring device as claimed in claim 20, wherein the register contains the average value of the temperature supplied over a fixed period.

24. A method of monitoring a value of a parameter derived from an analog signal, the method comprising:

producing a digital signal corresponding to the analog signal;

obtaining a value of said parameter, based on the digital signal; and

storing the obtained value in an output register, accessible by a processor unit.

25. A method as claimed in claim 24, further comprising setting a threshold value for said parameter, and for sending a signal to said processor when the value of the parameter reaches the threshold value.

26. A method of monitoring a voltage supplied by a battery, the method comprising:

producing a digital signal stream, corresponding to successive measured values of the battery voltage;

storing a value of at least one output parameter derived from said signal stream in an output register, accessible by a processor unit; and

updating the value of the or each parameter stored in the register as required in response to the digital signal stream.

27. A method as claimed in claim 26, wherein the

-15-

register contains the maximum value of the battery voltage supplied over a period since the register was last accessed by the processor.

28. A method as claimed in claim 26,
5 wherein the register contains the minimum value of the battery voltage supplied over a period since the register was last accessed by the processor.

29. A method as claimed in claim 26,
10 wherein the register contains the average value of the battery voltage supplied over a fixed period.

30. A method of monitoring a charging current supplied to a battery, the method comprising:

15 producing a digital signal stream, corresponding to successive measured values of the charging current;
storing the value of at least one output parameter derived from said signal stream in an output register, accessible by the processor unit; and

20 updating the value of the or each parameter stored in the register as required in response to the digital signal stream.

31. A method as claimed in claim 30, comprising storing in the register the maximum value of the charging current supplied over a period since the register was last accessed by the processor.

25 32. A monitoring device as claimed in claim 30, comprising storing in the register the minimum value of the charging current supplied over a period since the register was last accessed by the processor.

30 33. A method as claimed in claim 30, comprising storing in the register the average value of the charging current supplied over a period.

34. A method of monitoring a temperature, the method comprising:

35 producing a digital signal stream, corresponding to successive measured values of the temperature;

-16-

storing the value of at least one output parameter derived from said signal stream in an output register, accessible by a processor unit; and

5 updating the value of the or each parameter stored in the register as required in response to the digital signal stream.

35. A monitoring device as claimed in claim 34, comprising storing in the register the maximum value of the temperature supplied over a period since the
10 register was last accessed by the processor.

36. A monitoring device as claimed in claim 34, comprising storing in the register the minimum value of the temperature supplied over a period since the register was last accessed by the processor.

15 37. A monitoring device as claimed in claim 34, comprising storing in the register the average value of the temperature supplied over a fixed period.

00000001 102201